ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONSTRUCTION PERMIT

Permit No. 302CP03 Final Date: – March 18, 2002
Rescinds and Replaces Permit No. 9911-AC007

KENNECOTT GREENS CREEK MINING COMPANY
KENNECOTT GREENS CREEK MINE

The Department of Environmental Conservation, under the authority of AS 46.03, AS 46.14, and 18 AAC 50.315, issues an Air Quality Construction Permit to:

Operator: **Kennecott Greens Creek Mining Company**
P.O. Box 32199
Juneau, AK 99803-2199

Location: 8.3 miles southeast of Hawk Inlet on Admiralty Island and about 18 miles southwest of Juneau, Alaska; Section 4, T44S, R66E, Copper River Meridian.

The Department authorizes the Permittee to establish a new 5.045 MW Solar Combustion Turbine at the Kennecott Greens Creek Mining facility in accordance with the terms and conditions of this permit, and as described in the permit application and subsequent submittals listed in Exhibit AA. The permit also authorizes the Permittee's requested operational and emission limits to avoid PSD review.

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John F. Kuterbach, Manager
Air Permits Program

PERMIT TERMS AND CONDITIONS

A. 18 AAC 50.340(i): Permit Continuity

1. Permit No. 9911-AC007 is rescinded and replaced in its entirety with this permit.

2. Except as revised or rescinded herein or as superseded by an Air Quality Permit issued under AS 46.14.170, the Permittee shall comply with terms and conditions of Air Quality Control Permit to Operate No. 9511-AA015, issued November 19, 1996.

3. If permit terms and conditions listed in this permit conflict with those of Permit No. 9511-AA015, the Permittee shall comply with terms and conditions listed herein.

4. Exhibit AA in this permit is a continuation and addendum to Exhibit AA, Permit Documentation of Air Quality Construction Permit. No. 9911-AC007.

5. Exhibit CC in this permit is a revision to Exhibit CC, Source Inventory, of Air Quality Construction Permit No. 9911-AC007, to incorporate modifications.

B. Standard Permit Conditions

6. The Permittee shall comply with each permit term and condition; noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act, and is grounds for:

    6.1. An enforcement action;

    6.2. Permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or

    6.3. Denial of an operating permit application.

7. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

8. Each permit term or condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.

9. Compliance with the permit terms and conditions is considered to be compliance with those requirements that are:

    9.1. Included and specifically identified in the permit; or

9.2. Determined in writing in the permit to be inapplicable

10. The permit may be modified, reopened, revoked and reissued, or terminated for cause; a request by the permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition

11. The permit does not convey any property rights of any sort, nor any exclusive privilege

12. The Permittee shall allow an officer or employee of the Department, or an inspector authorized by the Department, upon presentation of credentials and at reasonable times, with the consent of the owner or operator, to:

12.1. Enter upon the premises where a source subject to the construction permit is located or where records required by the permit are kept;

12.2. Have access to and copy any records required by the permit;

12.3. Inspect any facilities, equipment, practices, or operations regulated by or referenced in the permit; and

12.4. Sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

13. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit, or to determine compliance with the permit; upon request, the permittee shall furnish to the Department copies of records required to be kept; the Department, in its discretion, will require the permittee to furnish copies of those records directly to the federal administrator.

14. The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department under this permit as required by 18 AAC 50.205.

C. Record Keeping, Reporting, and Testing Conditions

15. Except as provided in Conditions 20 and 21, submit two copies of test plans, reports, certifications, and notices required under Conditions 4, 12, 13, and 18, Exhibits A, C, and D of Permit No. 9511-AA015, and conditions of this permit to the Department's Air Permits Program, 610 University Avenue, Fairbanks, AK 99701, telephone (907) 451-2139; facsimile (907) 451-2187.

16. The Permittee shall keep records of required monitoring data and support information for at least five years after the date of the collection; support information includes calibration and

maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of reports required by this permit. The Permittee shall keep monitoring and compliance records as required by the Clean Air Act and applicable federal air-quality regulations.

17. If requested by the Department, the Permittee shall conduct source tests of unit exhausts and report results as described in 18 AAC 50.220. The Permittee shall comply with all applicable federal requirements, and shall:

17.1. Use the applicable test methods set out in 40 CFR Part 60, Appendix A, effective July 1, 1999, and 40 CFR Part 61, Appendix B, effective December 19, 1996, to ascertain compliance with applicable standards and permit requirements.

17.2. Conduct source tests of unit exhausts and report the results described. The Permittee may propose alternative test methods if it can be shown to be of equivalent accuracy, and will ensure compliance with the applicable standards or limits. Alternative test procedures must be approved by the Department prior to the test date.

17.2.1. Nitrogen Oxides, NO_x, expressed as NO_2 (ppm, lb/MMBtu, and lbs/hr): Reference Method 7E or Method 20 as specified in 40 CFR, Part 60, Appendix A.

17.2.2. Oxygen, O_2 (percent): Reference Method 3 or 3A as specified in 40 CFR, Part 60, Appendix A.

17.2.3. Stack Velocity and Volumetric Flow Rate: Reference Methods 1-4 as specified in 40 CFR, Part 60, Appendix A.

17.2.4. Particulate Matter (grains/dscf, lb/MMBtu, and lb/hr): Reference Method 5 as specified in 40 CFR, Part 60, Appendix A.

17.2.5. Sulfur Dioxide, SO_2 (ppm, lb/MMBtu, and lb/hr): Reference Method 6 or 6C as specified in 40 CFR, Part 60, Appendix A.

17.2.6. Carbon Monoxide, CO (ppm, lb/MMBtu, and lb/hr): Reference Method 10 as specified in 40 CFR, Part 60, Appendix A.

17.2.7. Visible Emissions Surveillance (percent): Reference Method 9 as specified in 40 CFR, Part 60, Appendix A.

17.3. Except of visible emissions surveillances;

17.3.1. Submit to the Department, within 60 days after receiving a request, and at least 30 days before the scheduled date of the tests, a complete plan for conducting the source tests.

17.3.2. Give the Department written notice of the tests 10 days before each series.

17.3.3. Within 45 days after completion of the set of tests, submit the results, to the extent practical, in the format set out in *Source Test Report Outline* in Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8).

18. The Permittee may seek Department approval of alternates to the monitoring, record keeping, and reporting requirements of this permit by submitting a written request to the Department. Until the Department approves an alternative of a monitoring, record keeping, or reporting requirement, comply with the requirements listed in this permit.

19. The Permittee shall install, calibrate, conduct applicable continuous monitoring system performance tests listed in 40 CFR 60, Appendix B, effective July 1, 1999-, and certify test results; operate; and maintain air contaminant emissions and process monitoring equipment on the sources as described herein and in documents provided by the Permittee, listed in Exhibit AA. Submit monitoring equipment siting, operation, maintenance plans, and procedures for approval by the Department 90 days prior to installing a new or modified system.

For continuous emission monitoring systems, comply with each applicable monitoring system requirement, as listed in 40 CFR 60.13, 60.19, 40 CFR 60, Appendix A, Method 19, Appendix B, Performance Specifications 2 and 6, and Appendix F, and the *EPA Quality Assurance Handbook For Air Pollution Measurements*, EPA/600 R-94/038b. Attach to the Facility Operating Report required by Condition 18 and Exhibit D of Permit No. 9511-AA015: 1) a copy of each quarterly continuous emission monitoring system data assessment report for Quality Assurance Procedures conducted in accordance with 40 CFR 60, Appendix F; and 2) a copy of each quarterly monitoring systems performance report in accordance with 40 CFR 60.7.

20. Excess emission reporting--Report excess emissions that present a potential threat to human health or safety as soon as possible to the Department's Division of Spill Prevention and Response (SPAR). From 8:00 AM to 4:30 PM, report the event to SPAR by telephone at (907) 465-5340, or by facsimile at (907) 465-2237. Outside of this time, report the event to SPAR by telephone at 800-478-9300. Provide a complete description of the event. Detail any assistance required from the Department as the result of the event.

21. Excess Emission and Permit Deviation Reports.

21.1. Except as provided in Condition 20, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows.

21.1.1. Report as soon as possible after the event commences

21.1.1.1. Emissions that present a potential threat to human health or safety; and

21.1.1.2. Excess emissions which the permittee believes to be unavoidable;

21.1.2. Within two days of discovery, report:

21.1.2.1. Excess emissions measured or observed, and

21.1.2.2. Operation in excess of permit requirements under this permit for
- ? allowable fuel quality or quantity,
- ? allowable hours of operation,
- ? any other limitation used to avoid a classification by limiting the facility's potential to emit,
- ? any other limitation used to assure compliance with ambient air quality standards or maximum allowable increases,
- ? Reasonable precautions to prevent fugitive dust;

21.1.3. No later than 30 days after the end of the month in which the deviation was discovered, report the failure to monitor emissions, and

21.1.4. Report all other deviations with the next facility operating report;

21.2. The report must include the form contained in Exhibit BB of this permit, and provide all information listed on the form.

21.3. If requested by the department, provide a more detailed written report as requested to follow up the excess emission report.

22. Keep a copy of this permit, the State Air Quality Control Regulations 18 AAC 50, and Alaska Statutes 46.14, at the permitted facility.

D. Operating Conditions

23. The Permittee is authorized to install Source Nos. 12, 13 and 15 at Kennecott Greens Creek Mine as follows:

Source	Description	Year Installed	Rating
12. Caterpillar Generator	Model 3516B, Diesel Electric	1996	1.825 MW
13. Diesel Generator	Model 3516B, Diesel Electric	1999	1.825 MW
15. Solar Combustion Turbine	Taurus 60-T7300S, GSC, Standard Dual, Diesel 2-D	2001	5.045 MW

24. Permittee shall install, maintain, and operate, in accordance with manufacture's procedures, fuel burning equipment, process equipment, emission control devices, testing equipment, and

monitoring equipment to provide optimum control of air contaminant emissions during all operating periods.

25. Operate each source in compliance with the applicable emission standards specified by 18 AAC 50.040-070, applicable federal New Source Performance Standard (NSPS), National Emission Standard for Hazardous Air Pollutants (NESHAP), limits established as the result of a best available control technology (BACT) or lowest achievable emission rate (LAER) determination, or the requested emission limits.

26. Keep and follow a preventative maintenance program for each source listed in Exhibit CC of this permit. Keep a copy of the procedures available at a location within the facility that is readily accessible to the equipment operators and to authorized representatives of the Department.

E. 18 AAC 50.010: Ambient Air Quality Standards

27. Ambient air quality compliance for facility operation is demonstrated at the facility fence-line.

28. The Permittee shall not interfere with the attainment or maintenance of the Ambient Air Quality Standard listed in 18 AAC 50.010 and shall not cause or contribute to a violation of the maximum allowable ambient concentrations (the PSD increments) listed in 18 AAC 50.020 as follows:

28.1. Comply with the SO_2 emission concentrations averaged over 3 hours not to exceed 500 ppm as listed in Exhibit B, Item D, of Air Quality Construction Permit No. 9511-AA015.

28.2. Except as provided for in Condition 28.3, construct and operate the facility in accordance with this permit and application;

28.3. Notify the Department prior to making any change at the facility that deviates from the permit and application, such as changes in equipment size, configuration, or location.

28.3.1. For changes under 18 AAC 50.370(a), the Permittee may notify the Department under 18 AAC 50.370(b) and may implement the changes in accordance with 18 AAC 50.370(c);

28.3.2. For other changes:

28.3.2.1. Ask the Department if proposed change warrants additional ambient impact assessment modeling;

28.3.2.2. Within 60 days upon receiving written Department notice that modeling is warranted, prepare and submit to the Department an ambient impact

assessment for the specified air contaminant and averaging period;

28.3.2.3. The Permittee shall not make the change until the Department concurs the change will not interfere with attainment or maintenance of ambient standards and increments.

F. Limits to Avoid Classification as Major Modification under 18 AAC 50.300(h)(3)

29. **Sulfur Dioxide Requirements**:

29.1. Limit total SO_2 emissions from Sources No. 5, 8, 12, 13 and 15 to less than 40 tons in any 12-consecutive month period;

29.2. For all fuel burning equipment (Sources No. 1-3, 5, 8, 12, 13 and 15 as identified in Exhibit CC of this permit):

29.2.1. the annual average fuel oil sulfur content shall not exceed 0.08 percent by weight; and

29.2.2. the fuel oil sulfur content shall not exceed 0.1 percent by weight at any time.

29.3. Limit total power output to:

29.3.1. Combined daily average power production from the five diesel-electric generators (Sources 1-3, 12 and 13) and combustion turbine (Source 15) (as identified in Exhibit CC) not to exceed 12.5 MW in any day during which the combustion turbine (Source 15) is operating.

29.3.2. Combined daily average power production from the five diesel-electric generators (Sources 1-3, 12 and 13) not to exceed 9.5 MW in any day during which the combustion turbine (Source 15) is not operating.

29.4. Monitoring and Recording:

29.4.1. Monitor compliance with the emission limits listed in Conditions 29.1 and 29.2 as follows:

29.4.2. Test the fuel-oil sulfur content, and record the percent sulfur content by weight, using any appropriate method listed in ASTM D 396 (or later publications of the same listing), for each shipment of fuel, corresponding to Exhibit C, Part II of Air Quality Construction Permit No. 9511-AA015, or obtain the fuel sulfur content from the vendor.

29.4.3. Monitor and record the date, time, and daily total power output for each of the

diesel-electric generators (Sources 1-3, 12, and 13) and combustion turbine (Source 15) once per day at a consistent time. Calculate the combined daily power output for all five diesel generators and the combustion turbine each day to determine compliance with Conditions 29.3.1 and 29.3.2.

29.4.4. Monitor and record the date, time, and daily fuel consumption for each of the diesel-electric generators (Sources 1-3, 12, and 13) and combustion turbine (Source 15) once per day at a consistent time. Calculate the combined daily fuel consumption for all five diesel generators and the combustion turbine each day.

29.4.5. Calculate and record the 1-hour average SO_2 emission rates for the diesel-electric generators (Sources No. 1-3, 12, and 13) and combustion turbine (Source No. 15) based on the fuel sulfur content set out as follows:

$E = [(Fc)(Sc/100)(2\text{ lb } SO_2/1\text{ lb S})]$

Where: $E = SO_2$ Emission Rate in lb/hr
Fc = Fuel Consumption Rate in lb/hr
Sc = Percent Fuel Sulfur Content

29.4.6. Calculate and record the total SO_2 emissions from all sources for each calendar month period. For Sources No. 1-3, 12, 13 and 15, total each of the 1-hour average SO_2 emission rates for the calendar month. For Sources No. 5 and 8, calculate and record the monthly SO_2 emission rates using the average fuel sulfur content and the monthly fuel consumption records. If the consumption records are missing or incomplete, for any emission source, estimate SO_2 emission rates based on operating hours and maximum design fuel consumption rates.

29.4.7. Calculate and record the facility's 12-month rolling average SO_2 emissions.

29.5. Reporting:

29.5.1. Report the type of fuel and the sulfur content of each shipment received for all fuel burning equipment (Sources No. 1-3, 5, 8, 12, 13 and 15) as set out in the Facility Operating Report, Exhibit D, Item 3, of the Air Quality Control Permit No. 9511-AA015.

29.5.2. Attach to the periodic Facility Operating Report:

29.5.2.1. A list of the total daily power output from the diesel-electric generators (Sources No. 1-3, 12, and 13) and combustion turbine (Source 15) for each day during the operating period. Identify any period for which the daily average power output exceeds the amounts listed in Conditions 29.3.1 and 29.3.2;

29.5.2.2. A list of the 12-month rolling average SO_2 emissions for each of Sources No. 1-3, 5, 8, 12, 13 and 15. Identify any period for which the total facility emissions exceed the 12-month emission limit of 43.5 tons per year; *or*

29.5.2.3. A list of the 12-month rolling average SO_2 emissions for each of Sources No. 1-3, 12, 13 and 15. Identify any period for which the total emissions from the six generators exceed the 12-month emission limit of 42.6 tpy and demonstrate that the emissions from sources 5 and 8 are less than 0.92 tons per year[1].

30. **Carbon Monoxide Requirements.**

30.1. Limit CO emission as follows:

30.1.1. Combined total emissions from Sources No. 1-3 to less than 100 tons per 12-month rolling period

30.1.2. Combined total emissions from Sources 5 and 8 to less than 6 tons per year[2] and

30.1.3. Combined total emissions from Sources 12, 13 and 15 to less than 93.3 tons 12 month rolling total[3]

30.1.4. Operate Source 15 to greater than 80% of 5.045 MW except during startup and shutdown

30.2. Source Testing Requirement:

30.2.1. Within 60 days after achieving the maximum production rate for emission Source 15, conduct a CO emission source tests on Sources 1-3, 12, 13 and 15 at four loads in the operating range of the units, including the minimum and maximum operating capacity of the unit. Monitor and record the fuel consumption and average electric power output during each test.

30.2.2. From each test, determine the fuel specific, CO emission factors using exhaust properties determined by Method 19 for each load. Use consistent heating values (higher heating value or lower heating value) throughout the analysis. If the "F" factor from Table 19-2 in Method 19 is used in the calculations, use fuel's higher heating value in all calculations.

[1] The department has determined the SO_2 PTE of units 5 and 8 to be 0.92 tpy
[2] The Department has determine the CO PTE of units 5 and 8 to be 6 tpy
[3] To avoid classification as a modification subject to PSD review, the Department will limit the PTE of the remaining sources added since the last PSD action to be less than 93.3 tpy

30.2.3. Within 45 days of the source test conducted in Condition 30.2, calculate and record the potential to emit from Sources 1-3, 12, 13 and 15. Use the worst-case emission factor at worst case operation based on results of the source tests.

30.3. Monitoring and Recording:

30.3.1. For Sources 1-3, 12, 13 and 15 monitor and record as provided for in Conditions 29.4.3 and 29.4.4.

30.3.2. Monitor and record power output from Source 15 to ensure operations exceed 80% of 5.045 MW.

30.3.3. Calculate the 12 month rolling CO emissions from Source 1-3, 12, 13 and 15 as follows:

30.3.3.1. Monthly average fuel consumption and load applicable emission factor except as provided in 30.3.3.2

30.3.3.2. If the potential to emit CO as determined in Condition 30.2.3 for Sources 12, 13 and 15 is greater than 84 tons[4] per 12-month rolling period, then refine the calculations for Sources 12, 13 and 15 to a daily basis.

30.4. Reporting:

30.4.1. Attach to the Periodic Facility Operating Report the cumulative total monthly and 12-month rolling CO emission rates from Sources 1-3, 12, 13 and 15:

30.4.1.1. From the permit issue date forward or

30.4.1.2. If the Sources 1-3, 12, 13 and 15's operation has not yet approached 12 months, list the cumulative emissions of the unit as a substitute for compliance with the 12-month rolling total emission limit.

30.4.2. The Permittee is exempt from reporting CO emissions in Condition 30.4.1 prior to submission of source test results. Within 45 days after the source tests, submit to the Department:

30.4.2.1. A demonstration showing that the potential to emit CO from Sources 1-3 is less than 100 tons per 12-month rolling period;

30.4.2.2. A demonstration showing that the potential to emit CO from Sources 5 and 8, is less than 6 tons per year;

[4] 90% of 93.3 tpy

30.4.2.3. Except as provided for in Condition 30.4.2.1 or 30.4.2.2, an analysis showing that the potential to emit CO from Sources 12, 13 and 15 is less than 93.3 tons per 12-month rolling period;

30.4.3. Report the power output in compliance with 30.3.2.

31. **Nitrogen Oxides Requirements**

31.1. For Source 1-3, 12, 13 and 15, comply with the 795 ppm, corrected to 15% O_2, NOx emission concentration limit for a 3 hour averaging period as listed in Exhibit B, Item E, of Air Quality Construction Permit No. 9511-AA015.

31.2. For Source 1-3, 12, 13 and 15 comply with total NOx emission rate limit of 535.7 tons per 12-month period, expressed as NO_2.

31.3. Monitoring and recording:

31.3.1. Monitor compliance with the emission limits listed in Conditions 31.1 and 31.2 using a Continuous Emission Monitoring System (CEMS) with data acquisition equipment as set out in Condition 19.

31.3.2. During operations of each of Sources No. 1-3, 12, 13 and 15:

31.3.2.1. Measure and record the 1-hour average NOx emission concentration.

31.3.2.2. Calculate and record the 1-hour average NOx emission concentration, corrected to 15% O_2.

31.3.2.3. Calculate and record the 3-hour rolling average NOx emission concentration, corrected to 15% O_2, no less than once each hour.

31.3.2.4. Calculate and record the 3-hour rolling average NOx emission rates expressed as NO_2, based on the methodology set out in 40 CFR 60, Appendix A, Method 19 as follows:

$$E = [C_d F_d 20.9]/[20.9-O_{2w}/(1-B_{ws})]$$

Where: E = NOx Emission Rate in ng/J (lb/million Btu)
C_d = Concentration of dry NOx in ng/scm (lb/scf)
F_d = Fuel Factor on a dry basis, scm/J (scf/million Btu)
O_{2w} = Percent Oxygen on a wet basis, %
B_{ws} = Moisture Fraction of the effluent gas

Use an average F factor of 2.47E-7 dscm/J unless calculated using the procedures listed in 40 CFR 60 Appendix A, Method 19, Part 3.2.1.

31.3.2.5. Record the date, time, duration, and average NOx emission concentration for any period during which emissions exceed 795 ppm corrected to 15% O_2, for greater than a 3-hour averaging period.

31.3.2.6. Calculate and record the total NOx emissions, expressed as NO_2, for each 24-hour and monthly period.

31.3.2.7. Calculate and record the 12-month rolling averages of NOx emissions, expressed as NO_2.

31.3.2.8. Record the CEMS daily calibration check. Maintain a log to document date, time, duration, and reason for any period during which the CEMS is out-of-bounds with CEMS performance parameters.

31.4. Reporting:

31.4.1. For each of Sources No. 1-3, 12, 13 and 15, report the maximum corrected 3-hour NOx emission concentration and average concentration during operation for each month.

31.4.2. Attach to the periodic Facility Operating Report a list of excess NOx emissions, corresponding to Condition 21, with the date, time, duration, and average emission concentration for any period exceeding 795 ppm for greater than 3 hours, corrected to 15% O_2.

31.4.3. Attach to the periodic Facility Operating Report the cumulative total monthly and 12-month rolling average NOx emission rates, expressed as NO_2, from Sources 1-3, 12, 13 and 15:

31.4.3.1. From the permit issue date forward or

31.4.3.2. If the Sources 1-3, 12, 13 and 15 operation has not yet approached 12 months, list the cumulative emissions of the unit as a substitute for compliance with the 12 month rolling total emission limit of 535.7 tons.

32. **Particulate Matter Requirements**.

32.1. PM emission limit for Sources No. 1-3, 12, and 13 not to exceed 0.021 grains/dscf.

32.2. Monitoring and recording:

32.2.1. Upon the Department's request, verify compliance with the grain loading standard by conducting Particulate Matter source tests in accordance with Condition 17.

32.3. Reporting:

32.3.1. Report the source test results to the Department, in accordance with Conditions 17.3.3.

G. 18 AAC 50.040: Federal Standards Adopted by Reference

33. Comply with the requirements of 40 CFR 60, New Source Performance Standards (NSPS) effective July 1, 1999, as they apply to affected facilities specified in Conditions 34 through 35.

33.1. Submit a copy of all NSPS reporting to the U.S. EPA Region 10 and the Department, as required by the applicable Federal standards. The Permittee may attach periodic federal reporting to the Facility Operating Report required by Exhibit D of Permit to Operate No. 9511-AA015.

33.2. Notify the Department of any U.S. Environmental Protection Agency- (EPA) granted waivers of NSPS emission standards, record keeping, monitoring, performance testing, or reporting requirements within 30 days after the Permittee receives a waiver.

34. In accordance with 40 CFR 60, Subpart A and 18 AAC 50.040, for each construction, modification, or reconstruction of affected facilities and sources regulated under 40 CFR 60:

34.1. Notify the Department and EPA:

34.1.1. No later than 30 days after construction/reconstruction commencement in accordance with 40 CFR 60.7(a)(1);

34.1.2. No more than 15 days after start-up in accordance with 40 CFR 60.7(a)(3);

34.1.3. 60 days prior or as soon as practicable before modifying facilities that would be subject to NSPS as set out in 40 CFR 60.7(a)(4);

34.1.4. No less than 30 days prior to conducting a demonstration of continuous monitoring system performance as set out in 40 CFR 60.7(a)(5);

34.2. For affected facilities regulated under 40 CFR 60, maintain records of occurrence and duration of start-up, shut-down, or malfunction of an affected facility, control equipment, or monitoring equipment as set out in 40 CFR 60.7(b). Submit continuous monitoring system performance reports as set out in 40 CFR 60.7(c) and (d). Maintain a file of measurements as set out in 40 CFR 60.7(e);

34.3. For affected facilities regulated under 40 CFR 60, 60 days after achieving maximum production rate, but not later than 180 days after initial start-up, and upon the EPA

Administrator's request, conduct performance tests as follows:

34.3.1. Notify the Department and EPA at least 30 days in advance of any performance test and opacity observation as set out in 40 CFR 60.8(d), 60.11(e)(1), and Condition 17

34.3.2. Conduct performance tests and data reduction as set out in 40 CFR 60.8(b) and (f);

34.3.3. Provide the Department copies of EPA administrator approvals for alternative performance testing;

34.3.4. Provide sampling ports and platform(s), safe access to platforms(s), utilities, and conduct testing as set out under 40 CFR 60.8(c)(and (e); and

34.3.5. Furnish the Department and EPA a copy of the performance test and opacity observations as set out in 40 CFR 60.8(a) and 60.11(e)(2)-(5).

34.4. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate each affected facility including air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, as set out in 40 CFR 60.11(d);

34.5. The Permittee is prohibited from concealing a violation of any applicable NSPS as set out in 40 CFR 60.12;

34.6. For continuous monitoring systems and devices required under NSPS:

34.6.1. Ensure all systems and devices are installed, calibrated, and operational as set out in 40 CFR 60.13(b) prior to conducting a performance test under 40 CFR 60.8;

34.6.2. Conduct a performance evaluation of continuous emission monitoring systems (CEMS) as set out in 40 CFR 60.13(c);

34.6.3. Conduct daily zero and span checks of CEMS as set out in 40 CFR 60.13(d);

34.6.4. Ensure all continuous monitoring systems meet the minimum frequency of operation requirements set out in 40 CFR 60.13(e), and are kept in continuous operation, except for system breakdowns, repairs, calibration checks, and zero/span adjustments;

34.6.5. Install continuous monitoring systems to obtain representative emission or process parameters, as set out in 40 CFR 60.13(f);

34.6.6. Reduce continuous monitoring system data as set out in 40 CFR 60.13(h); and

34.6.7. Provide the Department a copy of each EPA alternative monitoring approval or relative accuracy test audit approval issued under 40 CFR 60.13(i) or (j).

35. 40 CFR 60, Subpart GG; Sources No. 15:

35.1. Applicability, designation of affected facility, 40 CFR 60.330(a). The provisions of this subpart are applicable to stationary turbines with heat input at peak load equal to or greater than 10.7 gigajoules per hour (2.97 MW) which commenced construction after October 3, 1997, except as exempted;

35.2. At no time shall the emissions contain NOx in excess of those set out in 40 CFR 60.332(b);

$$STD = 0.015 (14.4/Y) + F$$

Where, STD = allowable NOx emissions (percentage by volume at 15 percent oxygen on a dry basis).
Y = manufacturer's rated heat rate at manufacturer's rated load, in kilojoules per watt-hour (kJ/w-hr).
F = NOx emissions allowance for fuel-bound nitrogen, as defined in 60.332(a)(3).

35.3. Permittee shall not burn any fuel which contains sulfur in excess of 0.8 percent by weight as set out in 40 CFR 60.333.

35.4. Monitoring and record keeping:

35.4.1. The permittee shall monitor nitrogen and sulfur content of fuel being burned in the turbine as set out in 40.CFR 60.334. The frequency will be each time the fuel is transferred to the storage tank, if the turbine is supplied from a bulk storage tank or daily, if the turbine is supplied without an intermediate storage tank as set out in 40 CFR 60.334(b).

35.5. Test methods and procedures:

35.5.1. The permittee shall use methods specified in 40 CFR 60.335 (a) and (d) to determine the nitrogen and sulfur content of the fuel being burned and compute NOx and SO_2 emissions using procedures set out in 40 CFR 60.335.

H. 18 AAC 50.055: Industrial Processes and Fuel-Burning Equipment:

For Sources No. 1-3, 5, 8, 12, 13, and 15:

36. Comply with 18 AAC 50.055(a)(1) and 18 AAC 50.055(b)(1), which state that visible emissions, excluding condensed water vapor, from an industrial process or fuel-burning equipment, may not reduce visibility through the exhaust effluent by greater than 20 percent, for a total of more than three minutes in any one hour, and particulate matter emitted from an industrial process or fuel-burning equipment may not exceed, per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours, 0.05 grains. Comply with the grain loading standard by achieving an emission limit of 0.05 grains/dscf for the boiler, air compressor and turbine (Sources No. 5, 8 and 15), and 0.021 grains/dscf for the diesel-electric generators (Sources No. 1-3, 12, and 13), as set out in Condition 32.

37. Comply with 18 AAC 50.055(c), which states that sulfur compound emissions, expressed as SO_2, may not exceed 500 ppm averaged over a period of three hours.

38. Monitoring and recording:

    38.1. Upon the Department's request, verify compliance by conducting Particulate Matter source tests in accordance with Condition 17.

    38.2. Within 30 days after receiving the Department's request, verify compliance by conducting visible emission surveillance in accordance with EPA Method 9 as listed in 40 CFR 60, Appendix A, effective July 1, 1999.

    38.3. Conduct visible emission readings of Source 15 within 60 days after startup of the turbine.

    38.4. Ensure SO_2 compliance with Conditions 27 and 37, by not exceeding the fuel sulfur contents as set out in Condition 29.2.

39. Reporting:

    39.1. Report to the Department, in accordance with Conditions 17.3.3, results of Department-requested particulate matter tests.

    39.2. Report the visible emission surveillance results within seven calendar days after conducting the surveillance.

    39.3. Report to the Department, in accordance with Condition 29.5.1, the type of fuel and the sulfur content of each shipment received.

I. Air Pollution Prohibited: 18 AAC 50.110

40. Comply with 18 AAC 50.110, which states that no person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property as follows:

40.1. Attach to the Facility Operating Report a written description of any public air pollution complaint, including the date, time, nature of complaint, and measures taken to resolve the complaint.

40.2. Take reasonable actions to address air pollution complaints resulting from emissions at the facility.

40.3. Notify the Department in advance of any planned modification or replacement of the fuel burning equipment, which might result in increased potential air-contaminant emissions. The notification must be in writing and must include a description of the proposed change and an estimate of any change in the quantity of emissions of each regulated air contaminant that may occur as the result of the modification or replacement.

EXHIBIT AA

PERMIT DOCUMENTATION

PERMIT DOCUMENTATION

January 2, 2002	KGCMC letter to ADEC with comments for Preliminary Air Quality Construction Permit No. 302CP03
November 29, 2001	Preliminary Air Quality Construction Permit No. 302CP03
November 29, 2001	Preliminary Technical Analysis Report for permit No. 302CP03
November 9, 2001	KGCMC letter to ADEC informing removal of Back Cat generator from permit application.
October 17, 2001	KGCMC letter to ADEC with supplemental information to application.
September 18, 2001	ADEC e-mail to KGCM informing findings of permit history.
September 6, 2001	KGCM e-mail to ADEC with Construction permit changes.
July 25, 2001	KGCM letter to ADEC enclosing follow up NSPS applicability assessment of Turbine.
July 18, 2001	KGMC letter to ADEC with Turbine emission parameters and Coastal Zone Project Questionnaire.
July 16, 2001	KGCM Permit Application
November 1, 2001	Memorandum from Jeffery Anderson: Review of modeling for new turbine generator operations.
June 5, 1999	KGCMC letter to ADEC clarifying comments.
May 17, 1999	KGCMC comment on preliminary construction permit.
April 13, 1999	ADEC public notice of preliminary construction permit .
March 30, 1999	ADEC received retainer fee for KGCMC construction permit.
March 1, 1999	KGCMC letter to ADEC requesting an administrative amendment to Air Permits No. 9811-AC031 and 9511-AA015.
January 6, 1999	Permit No. 9811-AC031.
January 6, 1999	ADEC letter to KGCMC issuing Permit No. 9811-AC031.
October 12, 1998	ADEC letter to KGCMC regarding installation of CEMS.
August 20, 1998	Air Sciences letter to ADEC addressing comments on SO_2 modeling.

August 19, 1998	ADEC letter to KGCMC including comments on SO_2 modeling.
August 12, 1998	KGCMC letter to ADEC submitting pertinent documentation, design specifications, and performance criteria for installation of CEMS.
July 24, 1998	Air Sciences, Inc., letter to ADEC summarizing findings of SO_2 modeling analysis using the ISCST3 dispersion model.
July 17, 1998	Air Sciences, Inc., letter to ADEC addressing the status of KGCMC's request for permit amendment.
July 16, 1998	ADEC letter to KGCMC stating application package requesting an amendment is complete.
July 16, 1998	Air Sciences, Inc., letter to ADEC summarizing findings of the completeness review.
July 16, 1998	Air Sciences, Inc., letter to ADEC requesting information for KGCMC Application Completeness Review.
June 24, 1998	KGCMC letter to ADEC submitting certification and notarization.
May 18, 1998	KGCMC letter to ADEC submitting retainer fee.
May 15, 1998	KGCMC letter to ADEC requesting a permit amendment.
November 20, 1996	ADEC letter to KGCMC issuing Permit No. 9511-AA015

EXHIBIT BB

EXCESS EMISSION FORM

Excess Emission Notification Form

Submit to: Facsimile: (907) 269-7508 Telephone: (907) 269-8888 Email: airreports@envircon.state.ak.us

_____ _____

Company Name **Facility Name**

1. Event Information (Use 24-hour clock):

		END Time:	**START** Time:	**Duration** (hr:min):
Date:	_____	_____:_____	_____:_____	_____:_____
Date:	_____	_____:_____	_____:_____	_____:_____
			Total:	_____:_____

2. Cause of Event (Check all that apply):

- ☐ START UP
- ☐ SHUT DOWN
- ☐ UPSET CONDITION
- ☐ SCHEDULED MAINTENANCE
- ☐ CONTROL EQUIPMENT
- ☐ OTHER _____

Provide a detailed description of what happened. Attach additional sheets as necessary.

3. Sources Involved:

Identify each Emission Source involved in the event, using the same identification number and name as in the Permit. List any Control Device or Monitoring System affected by the event. Attach additional sheets as necessary.

Source ID No.	Source Name	Description	Control Device
_____	_____	_____	_____
_____	_____	_____	_____

4. Emission Standard Exceeded:

Identify each Emission Standard and Permit Condition exceeded during the event. Describe in detail, the extent to which each Standard or Condition was exceeded. List ALL known or suspected injuries or health impacts. Attach additional sheets as necessary.

Standard or Condition	Limit	Exceedence
_____	_____	_____
_____	_____	_____

5. Emission Reduction:

Describe in detail, ALL of the measures taken to minimize and/or control emissions during the event. Attach additional sheets as necessary.

6. Corrective Actions:

Describe in detail, ALL of the corrective actions taken to restore the system to normal operation. Attach additional sheets as necessary.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

_____ _____ _____

Printed Name Signature Date:

Excess Emission Notification Form

Submit to: Facsimile: (907) 269-7508 Telephone: (907) 269-8888 Email: airreports@envircon.state.ak.us

EXHIBIT CC

SOURCE INVENTORY

SOURCE INVENTORY

The Permittee is authorized under this permit to operate the following stationary sources, and other existing stationary sources with a rated capacity of less than 1 million British thermal units per hour (1.0 MMBtu/hr). The design rating, capacity, or throughput is set out in this Exhibit only for the purpose of aiding in the identification of the sources. The Permittee must notify the Department prior to installing any new equipment of any size to determine the applicability of regulatory requirements.

Source No.	Description	Year Installed	Capacity
1	Ruston Diesel-Electric Generator: Serial #IH 9763	1989	2200 kW
2	Ruston Diesel-Electric Generator: Serial #IH 9796	1989	2200 kW
3	Ruston Diesel-Electric Generator: Serial #IH 9795	1989	2200 kW
~~4~~	REMOVED FROM SITE		
5	Volcano Oil-Fired Boiler	1991	2.5 MMBtu/hr
6	Lime Storage Tank	1991	50 tons
7	Backfill Plant Cement Storage Silo	1991	180 tons
8	Sullair Model 900 Air Compressor	2001	189 HP @1800 RPM
9	REMOVED FROM SITE	1991	
10	1350 Mine Exhaust Adit	1991	
11	REMOVED FROM SITE		
12	Caterpillar 3516B Diesel-Electric Generator	1996	1825 kW
13	Caterpillar 3516B Diesel-Electric Generator	1999	1825 kW
14	Reserved		
15	Solar - Taurus 60-T7300S, Combustion Turbine	2001	5.045 MW